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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/060,497	01/30/2002	M. Lawrence Goldstein	GCSD-1211 (H7128)	8473

27975 7590 03/13/2003

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EXAMINER

LE, HOANGANH T

ART UNIT PAPER NUMBER

2821

DATE MAILED: 03/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
10/060,497

Applicant(s)  
GOLDSTEIN

Examiner  
HOANGANH LE

Art Unit  
2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Apr 22, 2002 is/are a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 2 6) ☐ Other:

### DETAILED ACTION

1. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

#### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1,2,4-8,11,18,19, and 21-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Jeon (the US Patent No. 5,327,146).

The Jeon reference teaches in figures 3 and 6 a phased array antenna comprising: a substrate 2; and a plurality of spaced apart phased array antenna elements 4,5 carried by the substrate 2 and arranged along an imaginary Archimedean spiral (figure 3). The imaginary Archimedean spiral comprises a plurality of levels (figure 3). The imaginary Archimedean spiral is inherently defined by the polar coordinate equation  $r=a\theta N$ , where  $r$  is a radius,  $\theta$  is an angle,  $a$  is a real number, and  $N=1$ . The plurality of phased array

antenna elements 4,5 have a substantially equal spacing along the imaginary Archimedean spiral. The phased array antenna has an operating wavelength  $\lambda$ , and wherein the substantially equal spacing is less than about  $10\lambda$  (col. 2, line 54). The plurality of phased array antenna elements comprises greater than about 20 phased array antenna elements (figure 3). All of the plurality of phased array antenna elements of the phased array antenna are along the imaginary Archimedean spiral (figure 3).

*Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3,9,10,12-17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeon (cited above) in view of Vail et al (the US Patent No. 6,522,294).

The Jeon reference teaches every feature of the claimed invention, excluding a plurality of element controllers each connected to at least one of the phased array antenna elements; and a central controller connected to the plurality of element controllers, and a spacing between adjacent pairs of phased array antenna elements along the imaginary Archimedean spiral being substantially equal to a radial spacing between adjacent levels.

The Vail et al reference teaches in figure 2 a plurality of element controllers 15 each connected to at least one of the phased array antenna elements; and a central controller 14 connected to the plurality of element controllers in order to provide beam steering (see the abstract).

Since one of ordinary skill in the art would recognize the benefit of providing beam steering, it would have been obvious to provide Jeon with element controllers and a central controller as taught by Vail et al.

Regarding claims 3, 12-17 and 20, it would have been an obvious matter of design choice to have a spacing between adjacent pairs of phased array antenna elements along the imaginary Archimedean spiral being substantially equal to a radial spacing between adjacent levels, since such a modification would have involved a mere change in the distance of components. A change in distance is generally recognized as being within the level of ordinary skill in the art.

### *Correspondence*

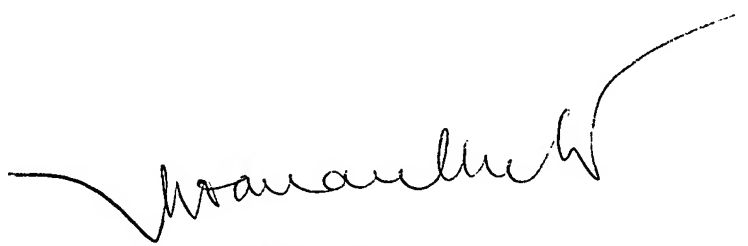
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Primary Examiner Hoanganh Le whose telephone number is (703) 308-4921.

7. Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center receptionist whose telephone number is (703) 308-0956.

8. Papers related to Technology Center 2800 applications **only** may be submitted to Technology Center 2800 by facsimile transmission. Any transmission not to be considered an official response must be clearly marked "DRAFT". The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Technology Center Fax Center number is (703) 308-7722 or (703) 308-7724.

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*Hoanganh Le*  
*Primary Examiner*  
*Art Unit 2821*  
*March 6, 2003*

A handwritten signature in cursive script, appearing to read 'Hoanganh Le', with a long horizontal line extending to the left and a large loop at the end.

Hoanganh Le  
Primary Examiner